PERSONNEL QUALIFICATIONS

Tonya M. Werner | Senior Associate

EDUCATION

- Illinois State University
  - Bachelor of Science, Chemistry, 1997

PRACTICE AREAS

- Analytical Chemistry
- Construction Materials
- Cement
- Mortar
- Aggregate
- Materials Evaluation and Research
- Wood Testing and Analysis

PROFESSIONAL AFFILIATIONS

- ASTM International

TECHNICAL COMMITTEES

- ASTM C01 - Cement
- ASTM C01.23 - Compositional Analysis
- ASTM C09 - Concrete and Aggregate
- ASTM C09.69-- Miscellaneous Tests

CONTACT

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EXPERIENCE

Tonya Werner specializes in chemical analysis and identification of components of construction materials, with a focus on failure analysis, evaluation, characterization of cementitious materials, and historic materials. She is proficient in many ASTM and AASHTO chemical analysis procedures.

Ms. Werner has expertise in instrumental chemical analyses using spectrophotometry, atomic absorption, x-ray diffraction, and x-ray fluorescence techniques. In addition, Ms. Werner has experience with wet chemistry, including chloride and sulfate analyses, as well as specialized analyses of water, soil, and cementitious materials. Performance of these chemical analyses leads to an understanding of material composition, which is used to better understand material performance and evaluation of material degradation.

REPRESENTATIVE PROJECTS

Analytical Chemistry

- X-ray diffraction analysis of efflorescence to determine composition
- Compositional analysis to determine cement content of concrete
- Analysis of water to determine corrosion potential
- Chemical analysis of cement and concrete to determine composition
- X-ray fluorescence analysis of portland cement for conformance with specification
- Analysis of water for use in precast concrete

Construction Materials

- Studies of Backfill Materials for Heave Potential- X-ray diffraction and chemical analysis to determine the presence of potentially expansive soil and aggregate components
- Analysis of aggregate sources to determine the potential for alkali-silica reactivity
- Grout analysis to determine expansion potential and compositional analysis
- X-ray diffraction analysis to determine filler and pigment components of paints and coatings

Materials Evaluation and Research

- Analyses of historic mortars from significant landmarks and structures to support restoration
- Compositional analysis of various materials to determine compliance with ASTM and DOT specifications
- Evaluation of mortars and stuccos to determine the composition, identify type and/or determine the variability from specifications
- Analysis of waterstop materials to determine expansion potential
- Quantitative x-ray diffraction analysis to determine the composition of magnesium oxide board

Wood Testing and Analysis

- Analyses and testing of plywood and discolored lumber for presence of preservatives and Fire Retardant Treatments (FRT)